Port Taranaki Ltd
Maintenance Dredging

Monitoring Programme

Biennial Report

2020-2022

Technical Report 2022-75

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Taranaki
Regional Council

Taranaki Regional Council
Private Bag 713
Stratford

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Executive summary

Port Taranaki Ltd (the Company) is the commercial operator of the port located on Breakwater Road, New Plymouth. Port Taranaki is an artificially created harbour which is contained by two breakwaters enclosing 94 hectares of sheltered water. The Company undertakes regular dredging to maintain navigable channels within the port. Sand accumulates in large quantities around the tip of the main breakwater and this has to be removed on a regular basis in order to maintain the required depth in the entrance channel. Due to this accumulation of sand around the breakwater, the city beaches to the north east of the port have previously been starved of sand.

During the monitoring period, Port Taranaki Ltd demonstrated a high level of environmental performance and high level of administrative performance with respect to its maintenance dredging campaign.

This report for the period July 2020 to June 2022 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Company's environmental and consent compliance performance during the period under review. The report also details the results of the monitoring undertaken and assesses the environmental effects of the Company's activities.

The Company holds three resource consents related to this report, which include a total of 29 conditions setting out the requirements that the Company must satisfy. The Company holds one consent to dredge accumulated sediments within Port Taranaki and two consents that allow them to discharge sediment into the inshore and offshore spoil disposal areas in the Tasman Sea.

In order to reflect the increased rate of sand entering the harbour that has been observed in recent years, the Company applied to change certain consent conditions during the monitoring period. On 9 December 2020, two resource consents were varied in order to increase the allowable cumulative removal and offshore deposition volumes in any three successive campaigns from 1,045,000 m^3 to 1,306,250 m^3. The removal and offshore deposition volume limits for a single campaign remained the same, and the inshore disposal consent was left unchanged.

The Council's monitoring programme for the 2020-2022 period included reviewing the dredge campaign information, three intertidal sand inspections along the New Plymouth foreshore, one intertidal ecological survey at four sites and one kaimoana survey at five sites.

The results obtained showed no adverse effects in the coastal environment attributable to the 2021 maintenance dredging campaign. Furthermore, there were no unauthorised incidents recording non-compliance in respect of the Company's maintenance dredging campaign during the period under review.

For reference, in the 2020-2021 year, consent holders were found to achieve a high level of environmental performance and compliance for 86% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 11% of the consents, a good level of environmental performance and compliance was achieved.

In the 2021-2022 year, consent holders were found to achieve a high level of environmental performance and compliance for 88% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 10% of the consents, a good level of environmental performance and compliance was achieved.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that the Company's performance remains at a high level in the year under review.

This report includes recommendations for the 2022-2024 monitoring period.

Table of contents

List of tables

List of figures

List of photos

1 Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is for the period July 2020 to June 2022 by the Council describing the monitoring programme associated with resource consents held by Port Taranaki Ltd (the Company).

The report includes the results and findings of the monitoring programme implemented by the Council in respect of the consents held by the Company that relate to the dredging of sediments within Port Taranaki and the discharge of these sediments to the Tasman Sea.

This is the sixth combined report by the Council for the Company.

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about:

- consent compliance monitoring under the *Resource Management Act 1991* (RMA) and the Council's obligations;
- the Council's approach to monitoring sites though annual programmes;
- the resource consents held by the Company;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted by the Company.

Section 2 presents the results of monitoring during the period under review, including scientific and technical data.

Section 3 discusses the results, their interpretations, and their significance for the environment.

Section 4 presents recommendations to be implemented in the 2022-2024 monitoring year.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

1.1.3 The Resource Management Act 1991 and monitoring

The RMA primarily addresses environmental 'effects' which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

a. the neighbourhood or the wider community around an activity, and may include cultural and social-economic effects;
b. physical effects on the locality, including landscape, amenity and visual effects;
c. ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
d. natural and physical resources having special significance (for example recreational, cultural, or aesthetic); and
e. risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of 'effects' in as much as is appropriate for each activity. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with Section 35 of

the RMA, the Council undertakes compliance monitoring for consents and rules in regional plans, and maintains an overview of the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, enables the Council to continually re-evaluate its approach and that of consent holders to resource management and, ultimately, through the refinement of methods and considered responsible resource utilisation, to move closer to achieving sustainable development of the region's resources.

1.1.4 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the consent holders, this report also assigns a rating as to each Company's environmental and administrative performance during the period under review. The rating categories are high, good, improvement required and poor for both environmental and administrative performance. The interpretations for these ratings are found in Appendix II.

For reference, in the 2020-2021 year, consent holders were found to achieve a high level of environmental performance and compliance for 86% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 11% of the consents, a good level of environmental performance and compliance was achieved.

In the 2021-2022 year, consent holders were found to achieve a high level of environmental performance and compliance for 88% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 10% of the consents, a good level of environmental performance and compliance was achieved.[1]

1.2 Process description

1.2.1 General

Port Taranaki is an artificially created harbour which lies between a group of offshore islands to the west and Kawaroa Reef, which is a large volcanic breccia reef that extends out to the 20 m contour line sub-tidally, to the east.

The port is enclosed by two breakwaters, the Main breakwater and the Lee breakwater, which were created to provide additional shelter to the port and the ships that visit. These breakwaters enclose 94 ha of sheltered water (Figure 1). Since the main breakwater at Port Taranaki was constructed, noticeable effects along the shoreline of New Plymouth have been observed.

A strong net littoral drift of sand occurs in a north-easterly direction along this area of coast. This drift is driven by the high-energy wave climate, which is dominated from the west north-west quarter, and causes sand to accumulate in large quantities around the tip of the main breakwater. Two problems occur as a result of the accumulated sand around the breakwater; firstly there are issues in maintaining the required depth in the shipping channel, secondly erosion of the city beaches to the east of the port has been largely attributed to the port breakwaters interrupting the natural sand transport along the coast.

The accumulated sand needs to be removed on a regular basis. Dredging takes place approximately every two years at Port Taranaki to ensure that ships with a large draft can enter the port safely. Historically the disposal of the dredge spoil has occurred 1,000 m due north of the tip of the main breakwater in water

[1] The Council has used these compliance grading criteria for more than 18 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

depths of 15 to 20 m. However, once the spoil has been deposited at these depths it is no longer available to contribute to the littoral drift east of the port.

Figure 1 Port Taranaki showing the Main Breakwater on the left and the Lee Breakwater on the right

1.2.2 Port Taranaki dredging history

Port Taranaki requires regular dredging. It has been shown that accretion occurs along a bank on the inside of the breakwater. This creates the breakwater bank and it is this feature that gives rise to the majority of the dredging volume.

Since the harbour was first constructed there has been an increase in the coastal erosion north-east of the port and along the city's foreshore and beaches. As a result of this, the Company applied for consent 5886 to introduce this sand back into the natural littoral drift of sand north east of the port.

Previously, the sediments were deposited offshore approximately 1,000 m due north of the port. In 1998 a trial inshore site was used following research by the University of Waikato (Black & McComb, 2000), where 47,000 m^3 of sediment was placed and monitored to investigate the dispersion patterns of sediment within this inshore site. The trial found that placed sediments dispersed in suspension rather than in bedload and that 12 months after the trial 40% of the deposited sand had moved from the deposition area, with some sand moving back towards the port entrance.

The results from this trial led to the positioning of the new inshore dispersal site that is exercised under consent 5886 (Figure 2). This new site is located in front of the city's foreshore, ranging in depth from 6-15 m. The area is 1,290 m long and 580 m wide, which equates to an area of approximately 70 ha. Initially the site was rectangular in shape, but following further investigation it was adjusted due to the location of a kelp forest bordering on the boundary of the site. Restrictions associated with the dredging vessel's draft and sediment movement were taken into account when choosing this site, to ensure that the sediments do not move offshore, as that would defeat the purpose of the consent.

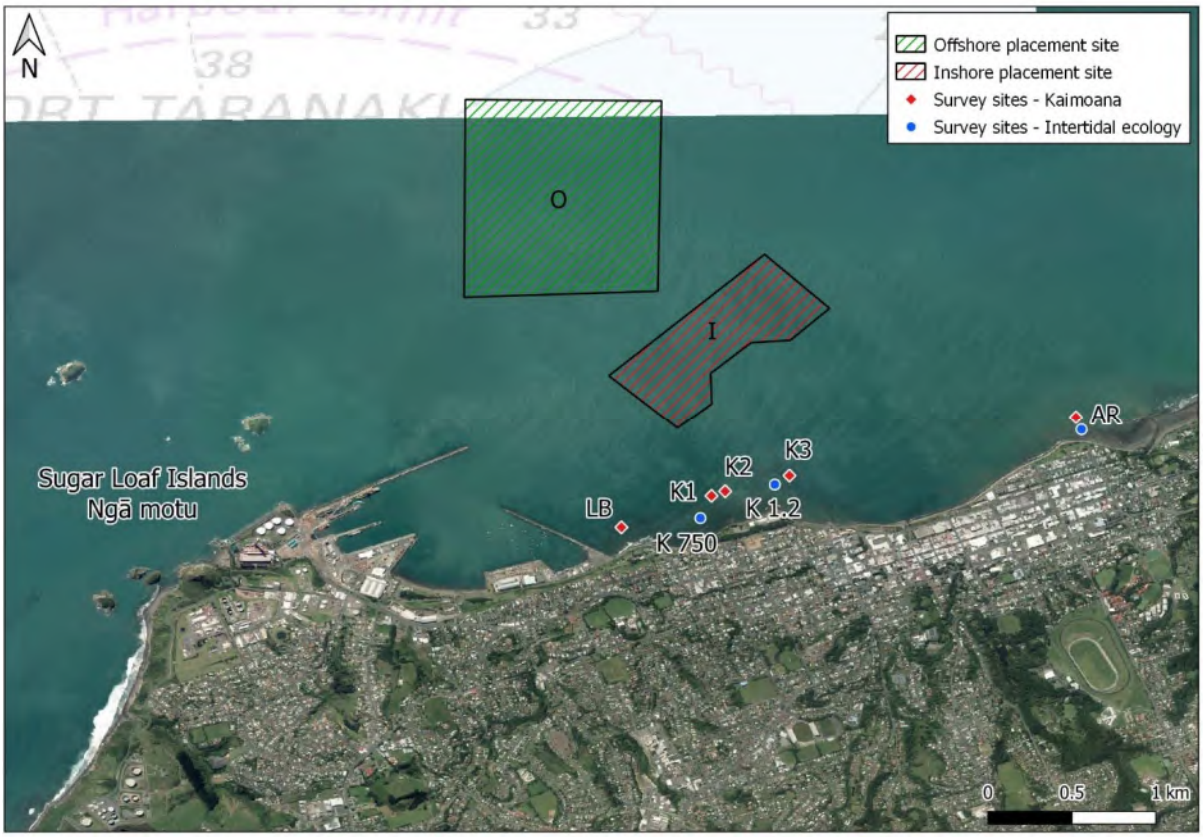

Figure 2 Offshore and inshore disposal grounds for Port Taranaki maintenance dredging and associated monitoring sites.

Maintenance dredging was carried out by a trailer suction dredge, the *Pelican,* for over 30 years. This was a split hopper dredge with a hopper capacity of 965 m^3. Once the vessel was full and on site ready to dispose the spoil, the entire hull would open in half and pivot about its longitudinal centreline on hinges just above deck level (Atkinson *et al.*, 2001). The Pelican would operate 24 hours a day for 6.5 days per week, with the remaining half day used for maintenance purposes. The 2017 maintenance dredging at Port Taranaki was the *Pelican's* last in the region, before being decommissioned.

Photo 1 The *Pelican* during a dredging campaign at Port Taranaki

In 2019, another trailing suction dredge took over the maintenance dredging for Port Taranaki, the *Albatros*, owned and operated by Dutch Dredging (Photo 2). Compared with the *Pelican*, the *Albatros* has improved control and accuracy, a greater rate of uptake and discharge of sediment, and greater storage capacity (1,860 m^3). The overall superior efficiency means that the campaign can run over a shorter period (approximately eight weeks), whilst only operating during daylight hours (06:00 to 18:00).

Photo 2 The *Albatros* trailing suction dredge (photo: https://www.dutchdredging.nl/)

1.3 Resource consents

The Company holds three resource consents the details of which are summarised in the table below. Summaries of the conditions attached to each permit are set out in Section 3 of this report.

A summary of the various consent types issued by the Council is included in Appendix I, as are copies of all permits held by the Company during the period under review.

Table 1 Summary of the Company's resource consents in relation to maintenance dredging

Consent number	Purpose	Granted	Review	Expires
Coastal permits				
3982-2.2	To remove accumulated sediments from the bed of the coastal marine area, within the area commonly known as Port Taranaki	9 Dec 2020	Jun 2025	1 Jun 2029
3374-2.1	To deposit accumulated sediments removed from the bed of the coastal marine area to an offshore disposal area	9 Dec 2020	Jun 2025	1 Jun 2029

Consent number	Purpose	Granted	Review	Expires
5886-1	To deposit up to 400,000 m^3 in any one dredging campaign, and up to 730,000 m^3 in any three successive dredging campaigns (or any seven-year period whichever comes first), of accumulated sands removed from the bed of the coastal marine area from the area commonly known as Port Taranaki, within an inshore disposal area on the western flank of Kawaroa Reef	9 Apr 2002	Jun 2025	1 Jun 2029

1.4 Monitoring programme

1.4.1 Introduction

Section 35 of the RMA sets obligations upon the Council to gather information, monitor and conduct research on the exercise of resource consents within the Taranaki region. The Council is also required to assess the effects arising from the exercising of these consents and report upon them.

The Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations and seek information from consent holders.

The monitoring programme for the Company's 2021 maintenance dredging campaign consisted of five primary components.

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- discussion over monitoring requirements;
- preparation for any consent reviews, renewals or new consent applications;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

1.4.3 Review of dredge data

As required by all three consents, following the dredging campaign, the consent holder forwarded the records to Council for review.

1.4.4 Intertidal sand inspections

Inspections were carried out before (3 February 2021) and after the dredging campaign (7 May 2021) and once the following year when no dredging had occurred (27 and 28 June 2022) in order to assess intertidal sand accretion on Kawaroa and Arakaitai Reefs.

1.4.5 Intertidal ecological surveys

Intertidal surveys were conducted at two sites on Kawaroa Reef, one site on Arakaitai Reef and a control site at Greenwood Road between 20 September and 7 October 2021 in order to assess any changes in intertidal ecological communities that may have resulted from dredging activities.

1.4.6 Kaimoana surveys

Surveys were undertaken at three sites on Kawaroa Reef, one site on Arakaitai Reef and one site off the Lee Breakwater between 3 and 19 March 2022 in order to assess any changes in kaimoana populations that may have resulted from dredging activities.

2 Results

2.1 Dredging campaign

Dredging was undertaken on one occasion during the period July 2020 to June 2022. The dredging and disposal operation commenced on 22 February 2021 and finished on 20 April 2021 (approximately eight weeks in total). The dredging campaign volume data is summarised in Table 2, along with data from previous campaigns.

Prior to commencement of the dredging campaign, bathymetric surveying of the residual sand volume within the inshore disposal ground found a volume of 229,770 m^3; 170,230 m^3 less than the total allowable volume authorised by resource consent 5886-1 (400,000 m^3).

A total hopper volume of 506,093 m^3 was removed from the main breakwater sandbank, berths and channel during the 2021 campaign. Accounting for site specific bulking factors (ranging from 1.12 at the main breakwater sandbank to 1.08 for channel sites C3 – C9), this equated to a total *in-situ* volume of 465,078 m^3. The majority of the removal volume was from the main breakwater sandbank (347,282 m^3 *in-situ* volume, or 68.6%). Of the total *in-situ* volume, 375,068 m^3 was disposed of at the offshore ground, and 90,010 m^3 was disposed of at the inshore ground.

The removal volume for the 2021 campaign was within the allowable limit for a single campaign. The cumulative volume removed during the last three dredging campaigns reached 1,306,373 m^3, which remained within 10% of the cumulative removal limit of 1,306,250 m^3 (as provided for in resource consent 3982-2.2). Disposal volumes were within the allowable limits for single campaigns and cumulative totals, for both the inshore and offshore disposal grounds. Compliance assessments of removal and disposal volumes were calculated based on hopper volumes corrected to *in-situ* volumes. See Table 2 for a detailed breakdown of dredging volumes and associated limits.

Following completion of the dredging campaign, the inshore disposal ground was re-surveyed (Figure 3, Table 2). The volume had increased by 118,591 m^3 over the eight week duration of the dredging campaign, to a final volume of 348,361 m^3, which remained below the maximum allowable volume for the inshore ground.

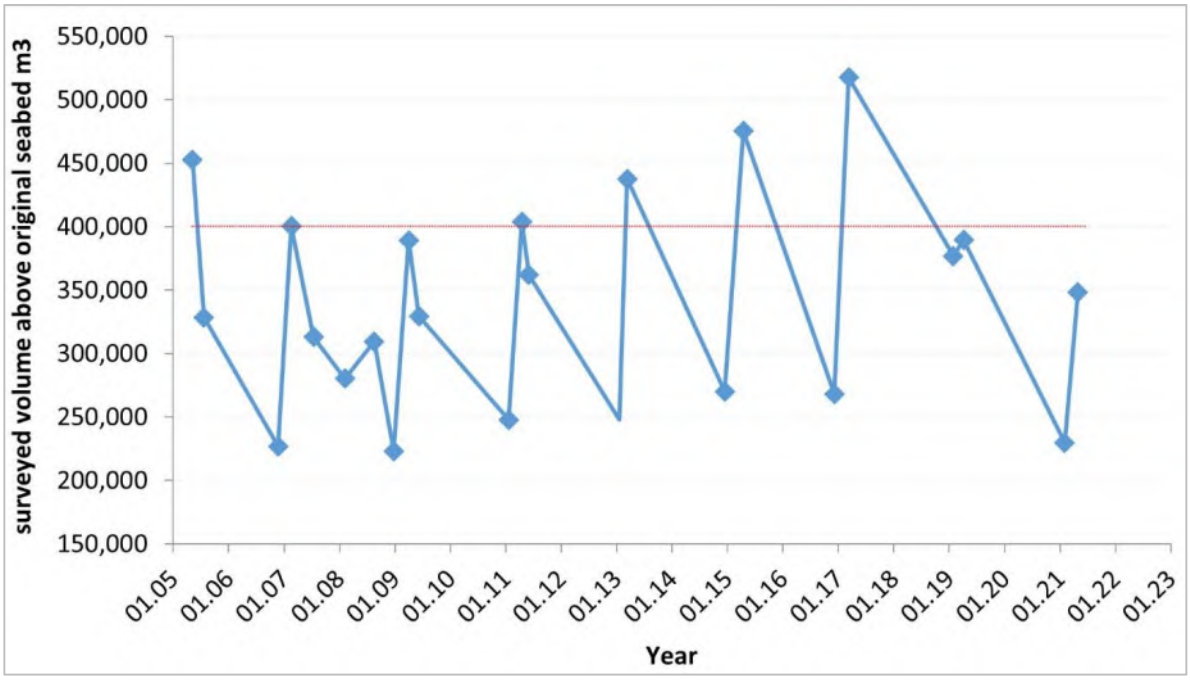

Figure 3 Inshore disposal ground volume above the original seabed (2005 to 2021)

Table 2 Port Taranaki Ltd maintenance dredging volume data summary (2004 – 2021)

Dredging Campaign		Consent 3982-2.2: Dredge removal		Consent 5886-1: Inshore disposal			Consent 3374-2.1: Offshore disposal	
		In-situ volume removed (m^3) (Hopper)	Cumulative volume: removed over three campaigns (m^3) (Hopper)	*In-situ* sand volume deposited (m^3) (Hopper)	Cumulative volume: deposited over three campaigns (m^3) (Hopper)	Final sand volume in dump ground (m^3) (Bathymetric survey)	*In-situ* sand volume deposited (m^3) (Hopper)	Cumulative volume: deposited over three campaigns (m^3) (Hopper)
1	12 Jan 2004 – 23 Mar 2004	343,872	-	253,633	253,633	-	90,239	-
2	13 May 2005 – 5 July 2005	313,195	-	199,101	452,734	328,493	114,094	-
3	29 Nov 2006 – 19 Feb 2007	307,769	964,836	173,475	626,209	400,294	134,294	338,627
4	5 Aug 2008 – 18 Aug 2008	55,761	676,725	29,166	401,742	309,531	26,595	274,983
5	3 Jan 2009 – 4 April 2009	239,750	603,280	165,995	368,636	389,213	73,755	234,644
6	18 Mar 2011 – 12 May 2011	285,659	581,170	156,086	351,247	361,858	129,573	229,923
7	19 Jan 2013 – 13 Mar 2013	272,334	797,743	189,677	511,758	437,576	82,657	285,985
8	19 Jan 2015 – 23 Mar 2015	210,284	768,277	196,277	542,040	475,245	14,007	226,237
9	8 Jan 2017 – 12 Mar 2017	409,095	891,713	292,661	678,615	517,660	116,434	213,098
10	5 Feb 2019 – 25 Mar 2019	432,200	1,051,579	0	488,938	389,501	432,200	562,641
11	22 Feb 2021 – 20 Apr 2021	465,078	1,306,373	90,010	382,671	348,361	375,068	923,702
Consent Limit (m^3)		**570,000**	**1,306,250**	**400,000**	**730,000**	**400,000**	**570,000**	**1,306,250**

NB: Volumes may be ±10% of limits stipulated in consents 3982-2.1 and 3374-2.1 when measurements are based on hopper volumes

2.2 Receiving environment monitoring

2.2.1 Intertidal sand inspections

Intertidal sand inspections were carried out before and after the dredging campaign (3 February and 7 May 2021, respectively) and the following year (27 – 28 June 2022) in order to assess intertidal sand accretion on Kawaroa and Arakaitai Reefs. The aim of these inspections was to identify potential effects of the campaign and to differentiate from those of natural processes. The inspections consisted of visual reef surveys to monitor significant changes sand inundation over time. During the reef surveys, photographs were taken to document any changes. Additionally, drone surveys were conducted to trial a new aerial survey method.

2.2.1.1 Kawaroa reef summary

During the pre-dredge inspection at Kawaroa Reef, some pockets of sand were observed at the top of the shore, along the foot of the boulder rip rap seawall (towards the eastern end of the reef). It is not unusual to observe small beaches forming in this location, though they do not always last. No other notable depositions of sand were observed across this reef (Figure 4, left).

During the post-dredge inspection, a thin veneer of coarse sand was trapped amongst some of the *Hormosira banksii* (Neptune's Necklace seaweed) on the intertidal reef platform. A small pocket of sand had accumulated at the Aquatic Centre outfall, and there was also a small belt of sand observed at the top of the reef where the rip rap transitions from boulders to blocks. Overall, the reef, including the intertidal pools, was largely free of sand and remained typical in appearance (Figure 4, right).

During the no-dredge year, some small pockets of sand were observed at the top of the reef, beneath the boulder rip rap. Very little sand was present across the reef; platforms and pools were largely sand free, down to low water. No notable depositions of sand were found anywhere on the reef.

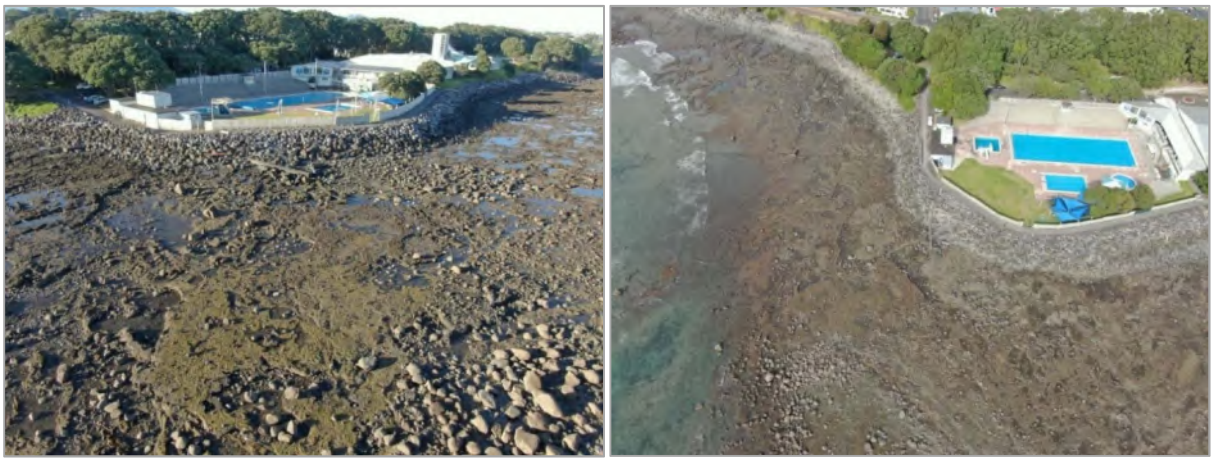

Figure 4 Aerial sand inspections of Kawaroa Reef, pre-dredge (left, 3 February 2021), post-dredge (right, 7 May 2021)

2.2.1.2 Arakaitai reef summary

During the pre-dredge inspection, pockets of sand were observed near the top of the reef where both the concrete groyne and old boulder rip rap groyne adjoined the boulder rip rap seawall, at the eastern end of the reef. At the western end of the reef, a small beach was present along the foot of the boulder rip rap seawall at the emergency wastewater outfall. No other notable depositions of sand were observed. The reef remained largely sand free and typical in appearance (Figure 5, left).

During the post-dredge inspection there were some patches of sandy tube worm (*Neosabellaria kaiparaensis*) that were beginning to establish. A thin veneer of coarse sand was observed on the reef

platform and within some of the pools. Sand had also accumulated where the concrete groyne meets the boulder rip rap wall at the eastern end of the reef, as well at the western end of the reef at the emergency wastewater outfall. Sand accumulation in these locations is not unusual, however. Overall, there was very little coverage of sand across Arakaitai Reef, and it remained typical in appearance (Figure 5, right).

During the no dredge year, a thin veneer of sand was present in patches on exposed coralline turfing algae and in some tidal pools. A belt of mixed cobbles and gravels was present at the base of the boulder rip rap, and either side of the concrete groyne. Considerable sand deposition and accumulation had occurred in the gut at the eastern flank of the reef, next to the sandy beach. This area of the reef was largely sandy bottomed already, and is prone to sand accumulation given its sheltered position. Overall, the vast majority of the reef remained rocky with little to no sand accumulation.

Figure 5 Aerial sand inspections of Arakaitai Reef, pre-dredge (left, 3 February 2021) and post-dredge (right, 7 May 2021)

2.2.1.3 Overall summary

Overall, Kawaroa and Arakaitai Reefs remained largely free of sand during the 2020- 2022 monitoring period. No significant build-ups of sand were discovered during any of the inspections. These findings indicate that neither natural process, nor inshore sand disposal during the 2021 dredging campaign resulted in any considerable inundation of sand on the intertidal areas of these reefs.

2.2.2 Intertidal ecological surveys

Intertidal ecological monitoring was undertaken at four sites to ascertain whether there had been any adverse effects on intertidal rocky reef communities as a result of maintenance dredging activities. The surveys were conducted between 20 September and 7 October 2021 at three potential impact sites; Arakaitai Reef (SEA902045), Kawaroa Reef 750 m north east of Lee Breakwater (SEA902055), Kawaroa Reef 1.2 km north east of Lee Breakwater (SEA902053); and a control site at Greenwood Road (SEA903070), approximately 20 km south west of Port Taranaki (Figure 6).

At each site, a 50 m transect was used to establish five 5 m x 3 m blocks. Within each block, five random 0.25 m^2 quadrats were laid giving a total of 25 random quadrats. For each quadrat, the percentage cover of algae and encrusting animal species was estimated using a grid. For all other animal species, individuals larger than 3 mm were counted. Under boulder biota was counted where rocks and cobbles were easily turned over.

Three key indicators of ecosystem health were determined for each site; species richness, species diversity, and sand coverage. Species richness refers to the mean number of different species recorded per 0.25 m^2 quadrat. Species diversity is measured using the Shannon-Wiener Diversity Index, which factors in the mean

number of species present and their relative abundance per quadrat. Sand coverage is calculated as the average percent cover of sand per quadrat.

It was expected that detectable adverse effects of the dredging activities on the intertidal communities would have been evident as a significant reduction of species richness and diversity at the impact sites relative to the control site, as well as evidence of a significant increase in sand cover at the impact sites.

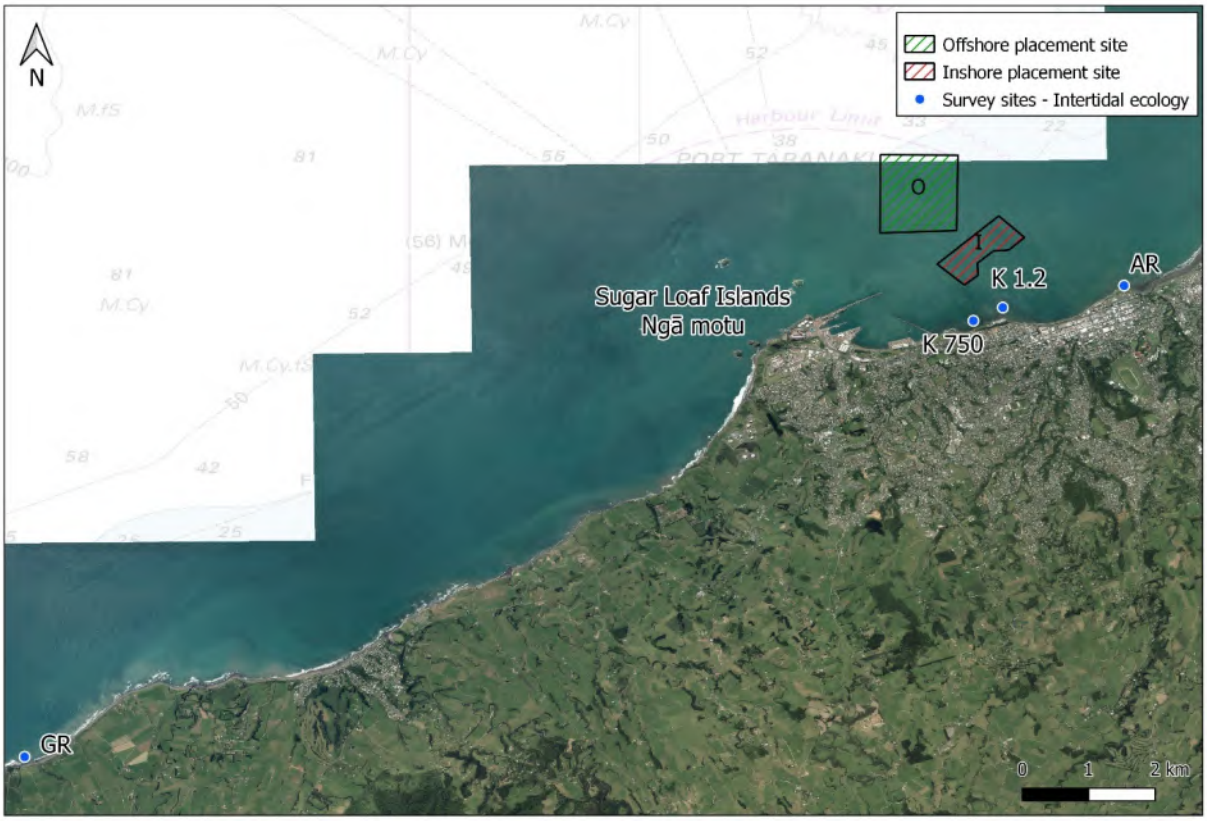

Figure 6 Intertidal ecological survey sites: Greenwood Road (GR), Kawaroa 750 m NE of Lee Breakwater (K 750), Kawaroa 1.2 km NE of Lee Breakwater (K 1.2) and Arakaitai Reef (AR)

Results from the 2021 ecological surveys show that sand cover was low (<1%) at all sites (Figure 7). Species richness decreased slightly from the previous survey for most sites with the exception of Arakaitai Reef (Figure 8). However, there were no statistically significant differences in species richness between the four survey sites. Survey results demonstrated a slight decrease in species diversity at all sites compared to the previous survey (Figure 9). Statistical analysis found that species diversity was significantly lower at the Greenwood Road site compared to the three potential impact sites.

Based upon results obtained for sand coverage, species richness and diversity at the four survey sites, the most recent (2021) maintenance dredge campaign does not appear to have adversely affected the intertidal rocky shore communities of Kawaroa and Arakaitai Reefs. Environmental factors such as wave exposure, natural sand movement and habitat complexity appear to been the dominant drivers of species richness and diversity at these intertidal rocky reef sites during the monitoring period.

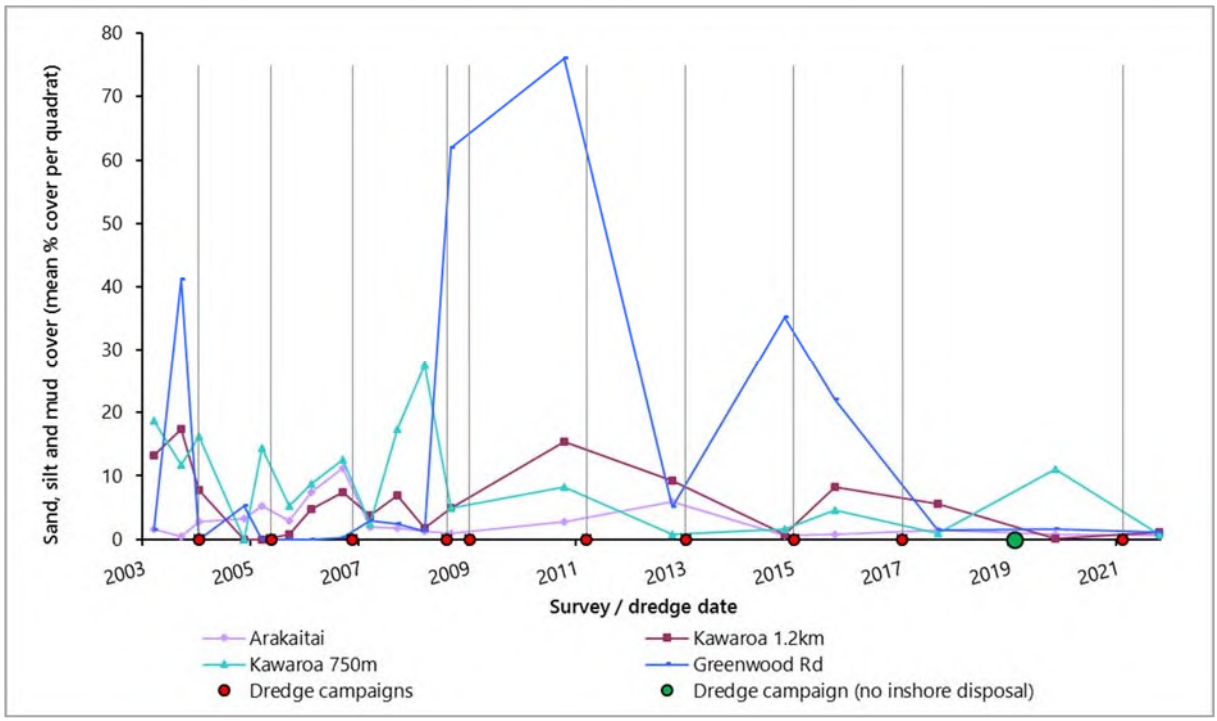

Figure 7 Mean total percentage of sand, silt and mud cover by site from 2003 to 2021

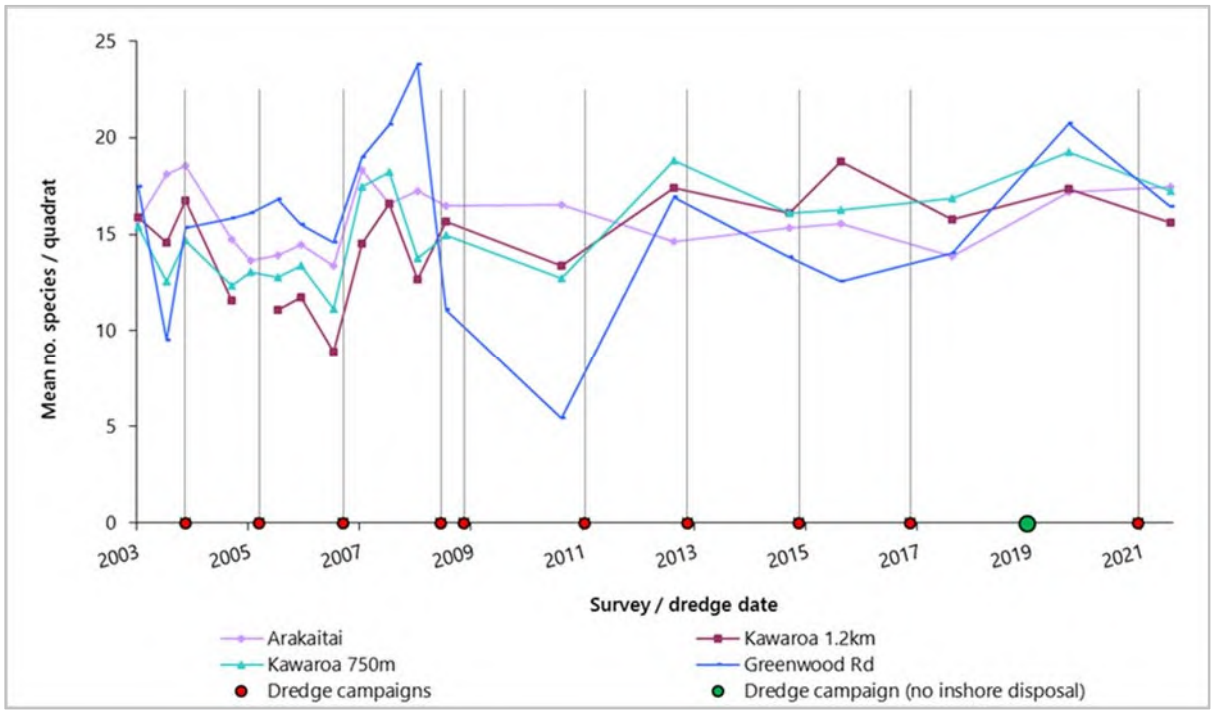

Figure 8 Mean number of species per quadrat at each site from 2003 to 2021

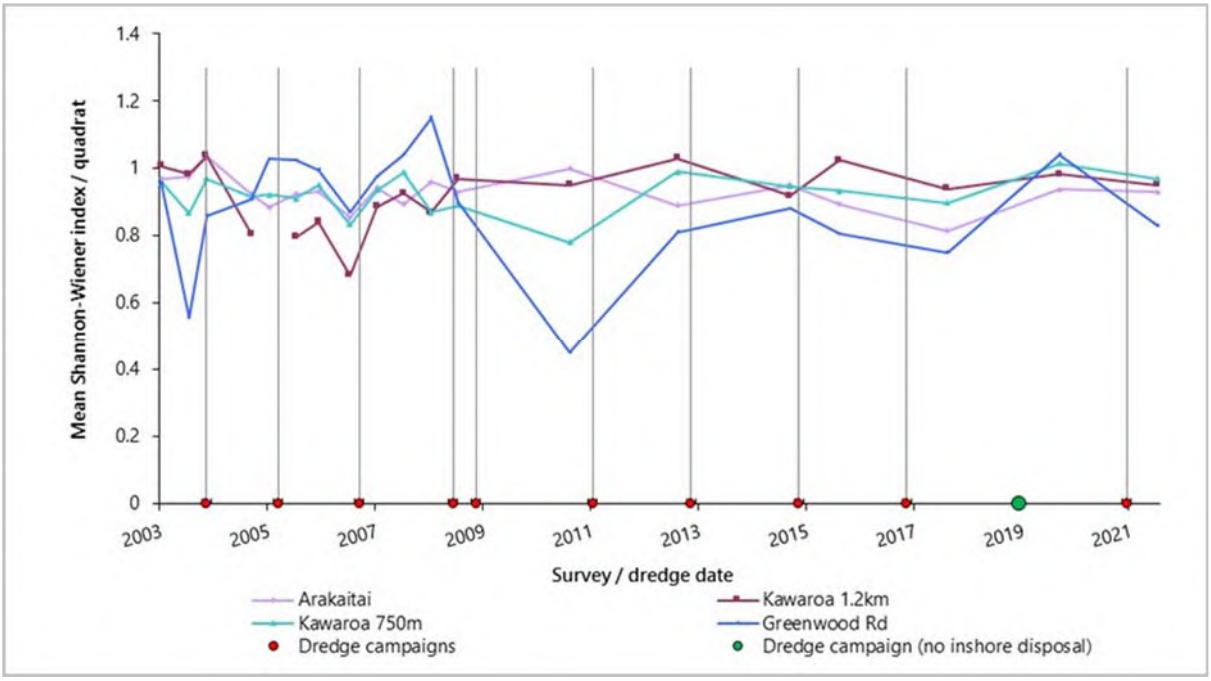

Figure 9 Mean Shannon-Weiner index per quadrat from 2003 to 2021

The complete intertidal ecological survey memorandum, including statistical analysis and further discussion of the findings, is available from Council upon request.

2.2.3 Kaimoana surveys

Prior to the establishment of Port Taranaki's inshore dredge disposal site, there was concern from the general public and local iwi that sand inundation from the dredging would affect kaimoana gathering from the local reefs. Sand inundation on rocky reefs can adversely affect animals such as pāua and kina by reducing habitat availability. This has the potential to affect the abundance and recruitment of these important kaimoana species.

In order to assess the potential effects of the 2021 summer maintenance dredging campaign at Port Taranaki on the nearby kaimoana populations, surveys were undertaken at five locally important kaimoana beds on Kawaroa Reef and Arakaitai Reef, as identified by Ngāti Te Whiti (Figure 10). The surveys included the low intertidal to shallow subtidal, which is not specifically covered as part of the intertidal monitoring component, but is recognised as being abundant in kaimoana species. The surveys were undertaken to gather information on kaimoana abundance, as well as gaining information on the size frequency of pāua. The surveys were carried out between 3 March and 19 March 2022.

A "rapid visual technique" was used in the survey which provides semi-quantitative count data. For each site, all available rocky crevice and under rock habitat was searched for 60 minutes. Within this time interval all pāua encountered (*Haliotis iris, Haliotis australis* and *Haliotis virginea*) were measured and counted. Other kaimoana species (kina *Evechinus chloroticus* and cooks turban shell *Cookia sulcata*) were also counted, but not measured.

Detectable adverse effects of the dredging activities on kaimoana species were expected to have been evident as a significant decline in pāua and kina counts in post-dredging surveys relative to pre-dredging surveys, in addition to a major build-up of sand on the reefs in association with the dredging activities.

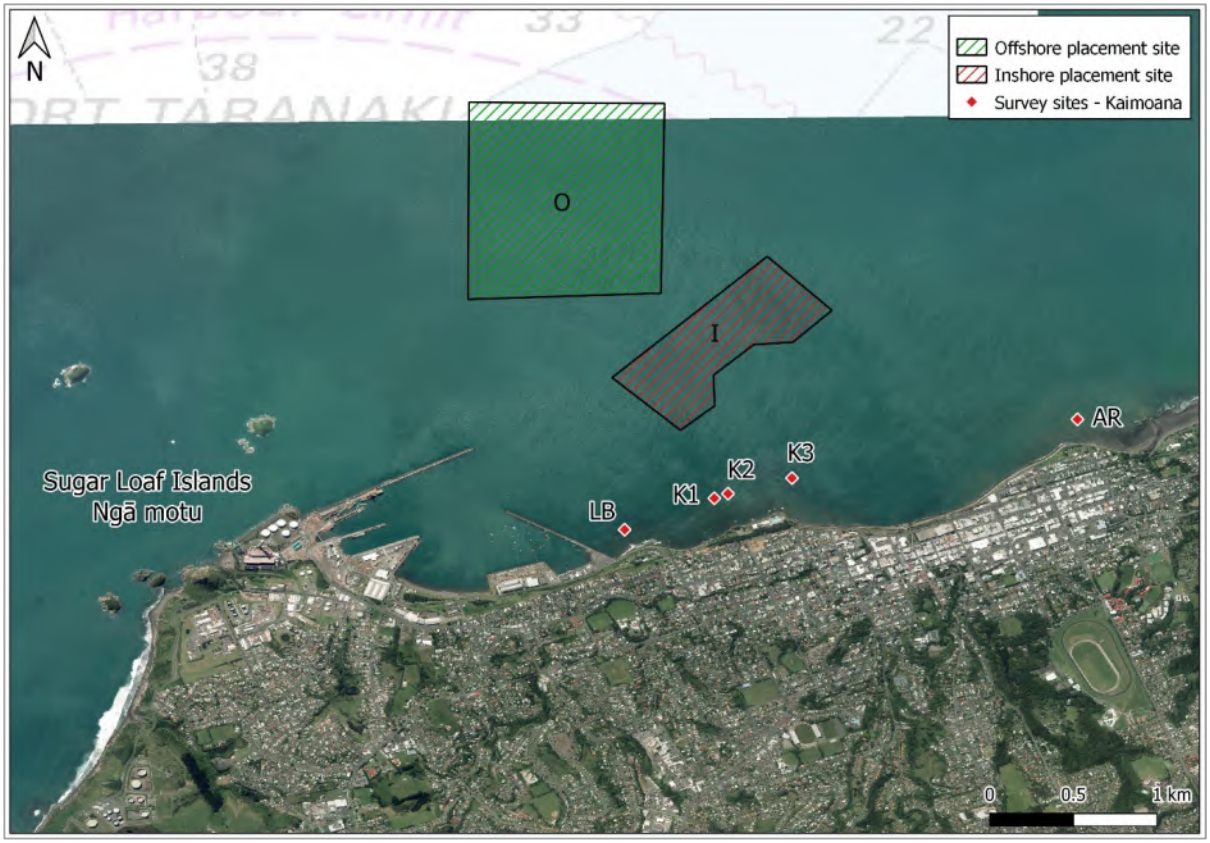

Figure 10 Kaimoana survey sites on Kawaroa and Arakaitai Reefs

Results from the 2022 kaimoana surveys show that most sites have had a higher mean pāua count in post-dredge surveys when compared with pre-dredge surveys, with the exception of the Lee Breakwater (Table 3). Pāua counts have remained relatively similar at most sites between 2011 and 2022, with Arakaitai exhibiting the most pronounced fluctuations (Figure 11). In 2022, Arakaitai Reef had the highest number of pāua (330 in total); however none of them were of legal size (≥ 85 mm). Since 2020, mean pāua length decreased at all surveyed sites with the exception of Arakaitai Reef, which presented an increase (Figure 12). Mean kina counts per minute have remained particularly low at all five sites since 2011 (Figure 13). In 2022, Kawaroa 3 presented the highest kina count per minute (0.42) while all other sites had negligible counts (<0.1 per minute; Figure 13). No Cook's turban shells were found at Kawaroa 1 or Arakaitai Reef, with low counts recorded at the remainder of the sites. No significant increases in sand cover were observed at these sites during the surveys.

Table 3 Pāua summary statistics from 2022 summer survey

	Lee Breakwater	Kawaroa 1	Kawaroa 2	Kawaroa 3	Arakaitai
Time (min)	60	60	60	60	60
Actual count	145	123	74	105	330
Minimum size (mm)	10	20	8	10	20
Maximum size (mm)	95	100	100	75	75
Mean size (mm)	47.6	45.4	53.0	40.2	52.2
Median size (mm)	40	40	50	40	50
Count (pāua/minute)	2.4	2.1	1.2	1.8	5.5

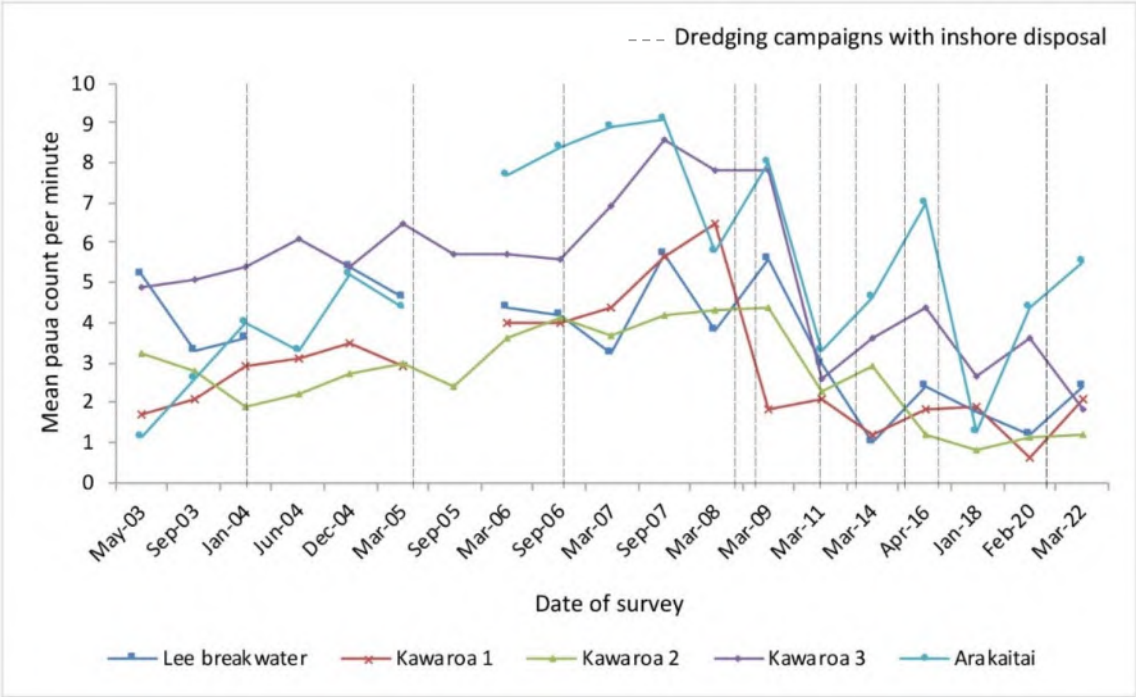

Figure 11 Mean number of pāua counted per minute searched during surveys from 2003 to 2022

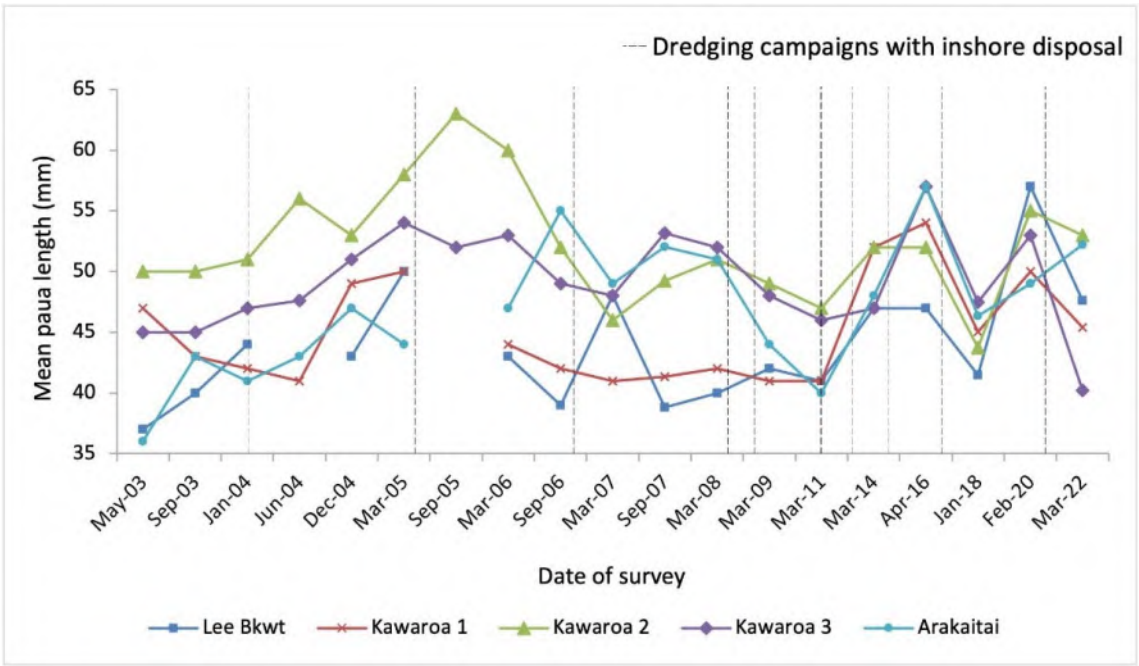

Figure 12 Mean length of pāua at the five reef sites during surveys from 2003 to 2022

Based on the results of the 2022 kaimoana survey, the 2021 maintenance dredging campaign does not appear to have adversely affected local kaimoana populations. Kaimoana species counts, and average pāua lengths, were comparable with recent surveys at all sites. Furthermore, there were no obvious reductions in habitat availability, due to sand inundation, identified during the surveys in 2022. Harvesting pressure, recruitment variability, habitat quality and availability due to sand inundation are all factors that directly affect kaimoana populations. On the Taranaki coast, sand movement and inundation is an ongoing natural process, making it difficult to isolate the effects of sand deposition from maintenance dredging.

However, the monitoring to date has not identified any occurrences of maintenance dredging campaigns leading to sand inundation on the rocky reef survey sites.

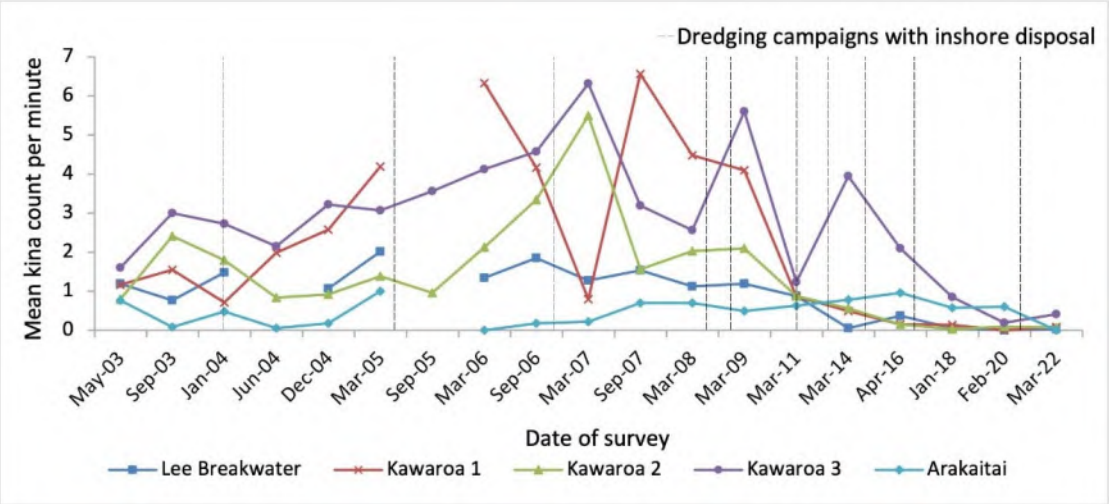

Figure 13 Mean number of kina counted per minute during surveys from 2003 to 2022

The complete kaimoana survey memorandum, including statistical analysis and further discussion of the findings, is available from Council upon request.

2.3 Incidents, investigations, and interventions

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the Company. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual causes of non-compliance or failure to maintain good practices. A pro-active approach, that in the first instance avoids issues occurring, is favoured.

For all significant compliance issues, as well as complaints from the public, the Council maintains a database record. The record includes events where the individual/organisation concerned has itself notified the Council. Details of any investigation and corrective action taken are recorded for non-compliant events.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified individual/organisation is indeed the source of the incident (or that the allegation cannot be proven).

In the 2020-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with the Company's conditions in resource consents or provisions in Regional Plans.

3 Discussion

3.1 Discussion of dredge campaign

Data from recent years evidenced a growing sand ingress within the harbour suggesting that higher volumes of sand are being transported north-east along the coast than what was predicted when the resource consents were originally issued. In 2019, the bathymetric survey showed that there was a limited capacity within the inshore disposal ground which led to the offshore ground being utilised for the disposal of all sediment from that dredging campaign. Subsequently, the Company applied to change the consent conditions of resource consents 3982-2.1 and 3374-2, in order to reflect the increased rate of sand entering the harbour. On 9 December 2020, the consents were modified (refer to 3374-2.1 and 3982-2.2 in Appendix I), increasing the allowable cumulative removal and offshore deposition volumes in any three successive campaigns from 1,045,000 m^3 to 1,306,250 m^3.

Consent limits for the removal and deposition of sediment were complied with throughout the 2021 dredging campaign. The total *in-situ* volume removed from the harbour over the last three campaigns is now 1,306,373 m^3, which is greater than the corresponding limit of 1,306,250 m^3 by approximately 0.009%. However, special condition 3 of consent 3982-2.2 allows the cumulative removal volume to exceed the limit by up to 10% in order to account for the margin of error associated with hopper based volume measurements. Therefore, the *in-situ* volume removed over the last three campaigns remains compliant.

3.2 Environmental effects of exercise of consents

The monitoring that was carried during the period under review failed to identify any significant inundation of sand on Kawaroa or Arakatai reefs that may have been linked to the 2021 dredging campaign. Results from the intertidal ecological surveys found that sand cover was low (<1%) at all sites. Furthermore, observations made during the kaimoana surveys and additional sand inspections were that both reefs remained largely free of sand and were typical in appearance.

The results of the intertidal ecological survey found no evidence to suggest that the 2021 dredging campaign had adversely affected the intertidal rocky shore communities of Kawaroa or Arakaitai Reefs. Survey results were comparable to previous years, and there were no significant reductions in species richness or diversity at the potential impact sites relative to the control site.

The results of the kaimoana survey also did not find any evidence to suggest that the 2021 dredging campaign had adversely impacted local kaimoana populations. Kaimoana species counts, and average paua lengths, were comparable with recent surveys at all sites. Furthermore, there were no obvious reductions in habitat availability, due to sand inundation, identified during the surveys. Harvesting pressure, recruitment variability, habitat quality and availability due to sand inundation are all factors that directly affect kaimoana populations. On the Taranaki coast, sand movement and inundation is an ongoing natural process, making it difficult to isolate the effects of sand deposition from maintenance dredging. However, the monitoring to date has not identified any occurrences of maintenance dredging campaigns leading to sand inundation on the rocky reef survey sites.

3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Tables 4-7.

Table 4 Summary of performance for Consent 3982-2.2

Purpose: ***To dredge accumulated sediments from Port Taranaki***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Written notice prior to dredging	Notice received	Yes
2. Dredging of loose sediments only, not bedrock	Information provided	Yes
3. Dredge volume maximum limits	Information provided	Yes
4. Exercise of consent in accordance with application	Information provided	Yes
5. BPO to minimise environmental effects	Inspections, information provided	Yes
6. Exercise of consent not to effect the recreational use of Ngamotu Beach	No complaints received	Yes
7. Consent holder to keep and maintain records of dredging activities	Information provided	Yes
8. Consent holder to undertake a representative sample of seabed sediments prior to June 2009	Samples provided	N/A
9. Option for review of consent	Next scheduled for review in June 2025 if required	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		**High** **High**

N/A = not applicable

Table 5 Summary of performance for Consent 3374-2.1

Purpose: ***To deposit dredged sediments within an offshore disposal area***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Written notice prior to dredging	Notice received	Yes

Purpose: *To deposit dredged sediments within an offshore disposal area*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
2. Dredging from within Port Taranaki and main shipping channel covered	Information provided	Yes
3. Dredging volume maximum limits	Information provided	Yes
4. Clean sand deposited at the inshore disposal site	Information provided	Yes
5. Exercise of permit in accordance with information submitted in application	Information provided	Yes
6. BPO to minimise adverse environmental effects	Information provided	Yes
7. Consent holder to keep and maintain records of dates, volumes etc.	Information provided	Yes
8. Option for review of consent	Next scheduled in June 2025 if required	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		**High** **High**

N/A = not applicable

Table 6 Summary of performance for Consent 5886-1

Purpose: *To deposit dredged sediments within an inshore disposal area*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Written notice prior to undertaking activities under consent	Notice provided	Yes
2. Exercise of permit in accordance with information submitted in application	Information provided	Yes
3. Sand dumped at inshore site restricted to clean sand from outer harbour	Information provided	Yes
4. Sand disposal limited to 400,000 m^3 minus estimated volume remaining in disposal area	Information provided	Yes

Purpose: *To deposit dredged sediments within an inshore disposal area*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
5. Consent holder to maintain records of disposal, including samples	Information provided	Yes
6. Water discolouration kept to a minimum	No issues observed and no complaints received	Yes
7. No significant sand inundation on the subtidal area of Kawaroa Reef	Sand inspections	Yes
8. No significant adverse ecological effects outside disposal area	Sand inspections, intertidal surveys	Yes
9. No significant adverse ecological effects on kaimoana	Kaimoana surveys	Yes
10. Disposal to cease if breach of conditions 7, 8, or 9	No breaches of consent conditions	N/A
11. Results of all monitoring made publicly available prior to review	Monitoring reports	Yes
12. Review of consent	Next scheduled review June 2025, if required	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		**High** **High**

N/A = not applicable

Table 7 Evaluation of environmental performance over time

Year	Consent no	High	Good	Improvement req	Poor
2014	3982	1	-	-	-
	3374	1	-	-	-
	5886	1	-	-	-
2016	3982	1	-	-	-
	3374	1	-	-	-
	5886	1	-	-	-
2018	3982	1	-	-	-
	3374	1	-	-	-
	5886	-	-	1	-
2020	3982	1	-	-	-

Year	Consent no	High	Good	Improvement req	Poor
	3374	1	-	-	-
	5886	-	-	-	-
2022	3982	1	-	-	-
	3374	1	-	-	-
	5886	1	-	-	-
Totals		13	0	1	0

During the monitoring period, the Company demonstrated a high level of environmental and administrative performance with the resource consents as defined in Appendix II. All relevant consent requirements were complied with during the 2021 dredging campaign, and no adverse environmental effects were detected.

3.4 Recommendations from the 2018-2020 Biennial Report

In the 2018-2020 Biennial Report, it was recommended:

1. THAT in the first instance, monitoring of the consented dredging activities in the 2020-2022 year remains unchanged from that in 2018-2020.
2. THAT information reporting requirements and timeframes are discussed and agreed upon between Council and the Company prior to the commencement of the 2021 maintenance dredging campaign.
3. THAT should there be issues with environmental or administrative performance in 2020-2022, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

3.5 Alterations to monitoring programmes for 2022-2024

In designing and implementing the monitoring programmes for air/water discharges in the region, the Council has taken into account:

- the extent of information already made available through monitoring or other means to date;
- its relevance under the RMA;
- the Council's obligations to monitor consented activities and their effects under the RMA;
- the record of administrative and environmental performances of the consent holder; and
- reporting to the regional community.

The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki exercising resource consents.

It is proposed that for 2022-2024 that the monitoring programme remains unchanged from that of 2020-2022. Information reporting requirements and timeframes will be agreed upon between Council and the Company, prior to the 2023 maintenance dredging campaign commencing.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the activity in question. The Council reserves the right to subsequently adjust the programme from that initially prepared, should the need arise if potential or actual non-compliance is determined at any time during 2022-2024.

4 Recommendations

1. THAT in the first instance, monitoring of the consented dredging activities in the 2022-2024 year remains unchanged from that in 2020-2022.
2. THAT information reporting requirements and timeframes are discussed and agreed upon between Council and the Company prior to commencement of the 2023 maintenance dredging campaign.
3. THAT should there be issues with environmental or administrative performance in 2022-2024, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

Agglomerate	A rock type made of a cemented mixture.
ANZECC	Australia and New Zealand Environment and Conservation Council.
Bathymetric	Measurement of depth in the sea which is used to produce charts and maps of areas of the seafloor.
Biomonitoring	Assessing the health of the environment using aquatic organisms.
Breccia	Rock of angular stones cemented by finer mixture.
Conglomerate	A rock consisting of pebbles and gravel cemented together.
Ecology	Relationship between organisms and their environment.
Gastropod	A snail.
In situ	In the original position.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
Incident register	The incident register contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.
Intertidal	Between the low water and high water marks.
Invertebrates	An animal that lacks a back bone or spinal column.
Kaimoana	Seafood.
Lahar	Volcanic rock.
Littoral drift	Movement of sediments within the nearshore coastal zone.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
Photosynthetic	Algae use the energy of sunlight to synthesise organic compounds from carbon dioxide and water.
Quadrat	A square metal frame of a known area used to quantify the abundance of organisms within this area.
Qualitative	Relates to the quality or character of what is being surveyed.
Quantitative	Capable of being measured or expressed in numerical terms.
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
Revetment wall	Rock boulder wall along the city's foreshore.
RMA	*Resource Management Act 1991* and including all subsequent amendments.
Subtidal	The area below the low tide mark.
Transect	Tape run along the shoreline where the random quadrats are taken from.

For further information on analytical methods, contact an Environment Quality Manager.

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Appendix I

Resource consents held by Port Taranaki Ltd

(For a copy of the signed resource consent
please contact the TRC Consents department)

Water discharge permits

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations. Permits authorising discharges to water are issued by the Council under Section 87(e) of the RMA.

Coastal permits

Section 12(1)(b) of the RMA stipulates that no person may erect, reconstruct, place, alter, extend, remove, or demolish any structure that is fixed in, on, under, or over any foreshore or seabed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Coastal permits are issued by the Council under Section 87(c) of the RMA.

Coastal Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Port Taranaki Limited PO Box 348 New Plymouth 4340	
Decision Date (Change):	9 December 2020	
Commencement Date (Change):	9 December 2020	(Granted Date: 28 January 2002)

Conditions of Consent

Consent Granted:	To deposit accumulated sediments removed from the bed of the coastal marine area to an offshore disposal area
Expiry Date:	1 June 2029
Review Date(s):	June 2021, June 2025
Site Location:	Seabed, approximately 1 km north of Port Taranaki
Grid Reference (NZTM)	Area bounded by at or about on the grid references, 1690212E-5678243N, 1690211E-5679543N, 1691412E-5678244N, 1691411E-5679544N
Catchment:	Tasman Sea

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a. That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b. That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c. That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special Conditions

1) The consent holder shall provide written notice to the Chief Executive, Taranaki Regional Council at least 15 working days prior to undertaking any activities under this consent.

2) The exercise of this consent covers both maintenance and capital dredged material from within the confines of the area commonly known as Port Taranaki, and the main shipping channel.

3) The volume of deposited material shall be no more than 570,000 cubic metres in any one dredging campaign, and no more than 1,306,250 cubic metres in any three successive dredging campaigns [or any seven year period, whichever comes first].

Note: The volume deposited may be +/- 10%, when measurements are based on hopper volume.

4) Every endeavour shall be made to ensure that clean sand be deposited at the inshore disposal site in accordance with coastal permit 5886 in order to mitigate the effects of the Port and its dredging activities upon the adjacent shoreline.

5) The exercise of this consent shall be conducted in accordance with the information submitted in support of the application and to ensure that the conditions of this consent are met at all times.

6) At all times the consent holder shall adopt the best practicable option, as defined in section 2 of the Act, to prevent or minimise any actual or likely adverse effect on the environment associated with dredging activities.

7) The consent holder shall keep and maintain records of all activities under this consent including dates, volumes and origins of all dredged material deposited and a hydrographic survey of seabed depths below chart datum of the spoil disposal area following each dredging campaign, and shall make these records available to the Chief Executive, Taranaki Regional Council, upon request.

8) In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2005 and/or June 2009 and/or June 2013 and/or June 2021 and/or June 2025, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 9 December 2020

For and on behalf of
Taranaki Regional Council

_____

A D McLay
Director - Resource Management

Coastal Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Port Taranaki Limited PO Box 348 New Plymouth 4340	
Decision Date (Change):	9 December 2020	
Commencement Date (Change):	9 December 2020	(Granted Date: 28 January 2002)

Conditions of Consent

Consent Granted:	To remove accumulated sediments from the bed of the coastal marine area, within the area commonly known as Port Taranaki
Expiry Date:	1 June 2029
Review Date(s):	June 2021, June 2025
Site Location:	Port Taranaki, New Plymouth
Grid Reference (NZTM)	Area bounded by at or about on the grid references, 1689214E-5676443N, 1689414E-5676343N, 1690213E-5677143N, 1690513E–5676644N
Catchment:	Tasman Sea

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a. That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b. That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c. That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

   i) the administration, monitoring and supervision of this consent; and
   ii) charges authorised by regulations.

Special Conditions

1) The consent holder shall provide written notice to the Chief Executive, Taranaki Regional Council at least 15 working days prior to undertaking any dredging activities under this consent.

2) The exercise of this consent provides for the maintenance dredging of loose sediments accumulated within the area commonly known as Port Taranaki and the main shipping channel and does not provide for capital [Port Deepening] dredging activities, associated with the removal of bedrock.

3) The volume of removed material shall be no more than 570,000 cubic metres in any one dredging campaign and no more 1,306,250 cubic metres in any three successive dredging campaigns [or any seven year period, whichever comes first].

   Note: The volume may be +/- 10% when measurements are based on hopper volume.

4) The exercise of this consent shall be conducted in accordance with the information submitted in support of the application and to ensure that the conditions of this consent are met at all times.

5) At all times the consent holder shall adopt the best practicable option, as defined in section 2 of the Act, to prevent or minimise any actual or likely adverse effect on the environment associated with dredging activities.

6) The exercise of this consent shall not affect the recreational use of Ngamotu Beach.

7) The consent holder shall keep and maintain records of all dredging activities under this consent including samples of dredged material, dates, volumes and hydrographic surveys of seabed depths below chart datum before and after each campaign, and shall make these records available to the Chief Executive, Taranaki Regional Council, upon request.

8) The consent holder shall undertake a representative sample of seabed sediments for chemical analysis including heavy metal concentrations to the satisfaction of the Chief Executive, Taranaki Regional Council, and present the findings at least 6 months prior to provision of review of the consent in June 2009 as provided for in special condition 8 below.

9) In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2005 and/or June 2009 and/or June 2013 and/or June 2021 and/or June 2025, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 9 December 2020

For and on behalf of
Taranaki Regional Council

_____

A D McLay
Director - Resource Management

Coastal Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Port Taranaki Limited P O Box 348 NEW PLYMOUTH	
Consent Granted Date:	9 April 2002	[by the Minister of Conservation]

Conditions of Consent

Consent Granted:	To deposit up to 400,000 cubic metres in any one dredging campaign, and up to 730,000 cubic metres in any three successive dredging campaigns [or any seven-year period whichever comes first], of accumulated sands removed from the bed of the coastal marine area from the area commonly known as Port Taranaki, within an inshore disposal area on the western flank of Kawaroa Reef defined by the Taranaki local circuit grid co-ordinates 285638E-710703N, 286045E-710297N, 285133E-709384N, 284726E-709791N, 285575E-710050N, 285816E-710050N, 285335E-709810N, and 285335E-709570N
Expiry Date:	1 June 2029
Review Date(s):	June 2005, June 2009, June 2013, June 2017, June 2021, June 2025
Site Location:	Seabed off Kawaroa Park, Tisch Avenue, New Plymouth
Legal Description:	n/a
Catchment:	Tasman Sea

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

   i) the administration, monitoring and supervision of this consent; and
   ii) charges authorised by regulations.

Special conditions

1) The consent holder shall provide written notification to the Taranaki Regional Council at least 15 working days prior to undertaking the activity licensed by this consent.

2) The activity licensed by this consent shall be undertaken in accordance with the information submitted in support of the application and to ensure that the conditions of this consent are met at all times.

3) Sand used for the inshore disposal area shall be restricted to clean sand dredged from the outer harbour deposits. No predominantly silty or muddy material dredged from inner harbour areas or from capital dredging shall be deposited.

4) Following the initial dredging campaign the annual volume of sand to be disposed shall be limited to 400,000 cubic metres minus the estimated volume of sand remaining in the inshore disposal area from the last campaign to ensure that there is no excessive long term build up of sand in the disposal area authorised by this consent.

5) The consent holder shall keep and maintain records of the inshore disposal of clean sands, including samples of deposited material, dates, volumes, and position of clean sands deposited, and forward these records to the Taranaki Regional Council upon the completion of each dredging campaign.

6) The consent holder shall undertake all practicable measures to ensure that water discoloration from the disposal is kept to an absolute minimum.

7) The exercise of this consent shall not give rise to any significant sand inundation on the subtidal [below Mean Low Water Spring] area of Kawaroa Reef outside of the inshore disposal area.

8) The exercise of this consent shall not give rise to any significant adverse ecological effects outside of the area specified as the inshore disposal area on the New Plymouth coast between the Lee Breakwater and the mouth of the Te Henui Stream.

9) The exercise of this consent shall not give rise to any significant adverse effects to kaimoana on the New Plymouth coast between the Lee Breakwater and the mouth of the Te Henui Stream.

10) Should there be a breach of conditions 7, 8 or 9 of this consent then the consent holder, shall at the direction of the Chief Executive of the Taranaki Regional Council, immediately cease any sediment disposal authorised by this consent and the consent holder shall not recommence that disposal until so authorised in writing by the Chief Executive of the Taranaki Regional Council.

11) The results of all monitoring undertaken in association with this consent shall be made publicly available at least three months prior to the provision of the review of the consent as provided for by special condition 12 below.

12) In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2005 and/or June 2009 and/or June 2013, and/or June 2017 and/or June 2021 and/or June 2025, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 10 October 2005

For and on behalf of
Taranaki Regional Council

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Director-Resource Management

Appendix II

Categories used to evaluate environmental and administrative performance

Categories used to evaluate environmental and administrative performance

Environmental performance is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. Administrative performance is concerned with the Company's approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

Events that were beyond the control of the consent holder and unforeseeable (that is a defence under the provisions of the RMA can be established) may be excluded with regard to the performance rating applied. For example loss of data due to a flood destroying deployed field equipment.

The categories used by the Council for this monitoring period, and their interpretation, are as follows:

Environmental Performance

High: No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving environmental impacts and was not obliged to issue any abatement notices or infringement notices in relation to such impacts.

Good: Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self-reports, or during investigations of incidents reported to the Council by a third party but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.

Improvement required: Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self-reports, or during investigations of incidents reported to the Council by a third party. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.

Poor: Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self-reports, or during investigations of incidents reported to the Council by a third party. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

Administrative performance

High: The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.

Good: Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively

adequate reason was provided for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

Improvement required: Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.

Poor: Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.